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October 19, 2005

BY OVERNIGHT MAIL

J.W. Reede, Project Manager
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: Pastoria Energy Facility Expansion (05-AFC-1)
–Comments on Preliminary Staff Assessment

Dear Mr. Reede:

This District is one of the water suppliers for the Pastoria Energy Facility and Expansion. District review of the Preliminary Staff Assessment (PSA) has found some areas related to "Soil and Water Resources" that would benefit from clarification. Therefore, attached find the District's recommended changes to the PSA.

These comments are primarily related to nomenclature and distinguishing between the District and Kern Water Bank water supply contracts for Pastoria.

It is also felt that separate metering for the Expansion described in "Proposed Condition of Certification - Soil & Water -4" is unnecessary as all water deliveries to the Pastoria Facility are metered by the District.

The District is in agreement with the CEC July 2005 Issue Identification Report where Water is determined not to be a Major Issue for the Expansion.

If questions arise, please call me at extension 21.

Sincerely,

Robert J. Kunde, P.E.
Assistant Engineer-Manager

Attachment
cc: File 7.1.18.2
(filename D:\2005\pef_05afc1_psa.ltr)

north (PEF 1999). At the aqueduct, peak flows of 3,600 cubic feet per second (cfs) have been recorded. Based on measurements taken between 1966 and 1978, peak annual flows of Pastoria Creek range from 12.4 to 200 cfs (PEFE 2005a, Attachment D, p.5.5-12, Table 5.5-1). For more discussion of flooding and surface hydrology, please see the **Geology and Paleontology** chapter of this PSA.

Water quality data submitted by the applicant for samples from Pastoria Creek establishes the pre-project chemical characteristics of the creek. The creek was sampled three times at the existing culvert at the intersection of Pastoria Creek and the Edmonston Pumping Plant Road: twice during February 2003 and once during May 2005. The sampling results are included as part of Data Response 43 (PEFE 2005h).

GROUNDWATER

Information regarding the groundwater elevations in the vicinity of the project indicates that depth to groundwater is 100 to 180 feet below land surface. The applicant reports that groundwater in the project area generally occurs at depths below 180 feet below the surface. However, cross sectional figures indicate that ~~groundwater is encountered~~ the confined water surface occurs at a depth of ~~100~~ approximately 150' feet below land surface in wells located one mile north east of the project (PEFE 2005h, cross section D-D'). Staff previously reported that the gravel pit located adjacent to the proposed site is approximately 100 feet deep and has not encountered any groundwater. It is possible that shallow, possibly perched water is present near the mouths of stream valleys such as Tejon, Tunis and El Paso Creeks. Fresh water aquifers extend down to 1,100 to 1,700 feet below surface and are hydraulically separated from oil bearing strata below at approximately 2,800 to 3,000 feet (CEC 2000b).

Minimal natural groundwater recharge occurs in the area because regional rate of evaporation usually exceeds rainfall. Annual precipitation in this area is approximately 12 inches (measured at Lebec located 8 miles south of the plant site) with nearly 90 percent of the rainfall occurring between the months of November and April. The region has a long growing season and an average annual evaporation rate of 82 inches (PEFE 2005a, Attachment D, p. 5.5-3, Table 5.5-2).

Groundwater quality data submitted by the applicant establishes the pre-project chemical characteristics of groundwater in the vicinity. Groundwater was sampled twice, in December 2002 and in January 2003. The monitoring well (MW1, State Well No. T10NR18W06Q01S) sampled is located approximately 1 mile northeast of the existing PEF site. The well penetrates to the base of the Santa Margarita Formation to a depth of about ~~400~~ 990 feet. The sampling results are part of Data Response 42 (PEFE 2005h).

PROJECT WATER SOURCES

The water supply, water delivery system, and water processing systems for PEFE would be provided by the existing PEF. The proposed project does not include a steam-generation cycle; therefore, the PEFE will require only 55 acre-feet of additional water annually. The primary water demand for PEFE would be limited to water for evaporative cooling of the CTG inlet air, cooling of the CTG auxiliary heat exchangers, and utility water for wash down. The PEFE and the existing PEF combined would use less than 5,000 acre-feet of water per year, which is the amount of water supplied annually under

which is sufficient to supply both the existing PEF project and the proposed PEFE project. PEF's primary water supply is provided by WRMWSD from excess water sold through the district's pool that is directly delivered or exchanged for SWP surface water. PEF's backup water supply is provided by ~~WRMWSD from its banked water reserve from Kern County Water Agency (PEFE 2005a)~~. the Kern Water Bank.

Under its contract with the Kern County Water Agency and California Department of Water Resources, which will remain in force through 2035, the WRMWSD is entitled to 197,088 acre-feet a year from the SWP and ~~delivers 190,000 acre-feet to its customers in a normal year.~~ The SWP water is provided to the WRMWSD through the Kern County Water Agency (KCWA). In addition to the SWP contract allocation, the WRMWSD is also entitled to flood flows or interruptible water that is usually available January to March. During those years with the worse hydrologic conditions, ~~WRMWSD has received~~ at least 60,000 acre-feet a year of water from the SWP (PEF 1999, Table 3.4.8-6, page 3.4-40). (C)

move to here

WRMWSD ~~will normally provide~~ provides water to PEF from the district's "pool," which is the unused portion of the district' SWP annual allocation. The purchase of water through the WRMWSD ~~WRMSWS~~ pool is governed by established rules. Pool water is excess water, which has been made available for sale by SWP water right holders within the WRMSWD. The rules that allow the use and sale of pool water are ~~negotiated and approved through SWP contracts administered by the California Department of Water Resources (CEC 2000c, page 191).~~

SOILS & WATER RESOURCES Table 4 summarizes chemical composition of the SWP water that will be used at PEFE, based on analyses of SWP water conducted between July 1998 and June 1999.

(A) "... delivered an average of 163,000 acre-feet per year for the last ten years (1995-2004)."

(B) "... described in the WRMWSD Rules and Regulations for the Distribution of Water."

(C) "... it is expected WRMWSD would receive..."

SOILS & WATER RESOURCES Table 4
California Aqueduct Water Quality

Constituents	Mean Concentration (Range)
Cations (mg/l)	
Calcium	18 (12-27)
Magnesium	9 (5-13)
Sodium	34 (19-52)
Iron	<0.005
Manganese	<0.005
Hardness	84 (52-121)
Anions (mg/l)	
Sulfate	33 (20-53)
Chloride	39 (20-62)
Fluoride	< 0.1
Bromide	0.13 (0.06-0.19)
Nitrate + Nitrite	0.55 (0.44-0.79)
Phosphorus (total)	0.13 (0.04-0.44)
Alkalinity	71 (41-109)
Metals (mg/l)	
Arsenic	0.002 (0.001-0.003)
Boron	0.2 (0.1-0.2)
Chromium	<0.005 (<0.005-0.007)
Copper	0.002 (0.002-0.005)
Lead	< 0.001
Selenium	<0.001
Zinc	< 0.005
Other	
TOC	3.7 mg/l (2.5-9.0 mg/l)
Turbidity	34 NTU* (3-140 NTU)
TDS	189 mg/l (114-249 mg/l)
Sp. Conductance	339 µS/cm** (205-436 µS/cm)
THM Formation Potential	372 µg/l (303-485 µg/l)

Source: PEFE 2005a, Table 3.4.8-2 Pastoria Energy Facility Expansion, California Aqueduct Water Analysis.
Note: Samples taken by CDWR at Tehachapi Afterbay (Check 41) on the California Aqueduct.
* Nephelometric Turbidity Unit
** MicroSiemens per centimeter

~~The PEF water supply contract was modified in 2001 to modify the backup water supply for the project~~. In the case that no water is available from the WRMWSD pool, ~~the district will provide~~ the PEF project ~~with~~ a backup water supply from its banked water reserve from KWB (PEFE 2005a). The use of banked water from the KWB by PEF is consistent with the designated beneficial uses for KWB. The Kern Water Bank Authority (KWBA) administers the KWB under established and approved rules and includes an active monitoring program (CEC 2000c, page 191). Prior to receiving imported resources through the SWP, the WRMWSD used ~~reservoir~~ aquifers that were subject to overdraft. Today, contributions to the Kern Water Bank, as well as other efforts, have resulted in a rise in the area's water table. WRMWSD has banked water in groundwater basins on the order of 743,000 acre-feet within the district boundaries and 243,000

acre-feet outside these boundaries (CEC 2000b). The modification of the PEF water supply contract to include banked water from ~~WRMWSD~~ KWB for the PEF backup water was reviewed by the Energy Commission, and the modification of PEF condition of certification **SOIL & WATER-5**, which addresses the project water supply, was adopted in March 2001 (CEC 2001).

ASSESSMENT OF IMPACTS AND DISCUSSION OF MITIGATION

METHOD AND THRESHOLD FOR DETERMINING SIGNIFICANCE

This project was analyzed to determine if it complies with LORS and meets the standards found in relevant documents such as California Environmental Quality Act (CEQA) Guidelines. The threshold of significance is based upon the ability of the project to be built and operated without violating erosion, sedimentation, flood, surface or groundwater quality, water use (supply) or wastewater discharge standards.

The Federal and State LORS and State and Local Policies presented in **SOIL & WATER Table 1** were used to determine the threshold of significance for this proceeding. For those impacts that exceed the published standards, or do not conform to the established practices, mitigation will be proposed by staff to reduce or eliminate the impact.

Responsible or co-lead (CEQA/National Environmental Policy Act - NEPA) agencies (or those with an advisory or trustee capacity), particularly those with discretionary approval over various aspects of the project will be consulted as required. For example, the local Regional Water Quality Control Board has extensive expertise and LORS responsibility for soil and water issues under their jurisdiction. Where it is necessary for the project to conform to legally enforceable LORS or other regulatory requirements whose purpose is to define an allowable level of impact or activity, such requirements may be used if they are determined by staff to be adequate as thresholds of significance.

The application of Best Management Practices (BMPs) will be required to manage stormwater related drainage, erosion, and sedimentation issues during for construction and operational of PEFE. The need to develop, implement, monitor, maintain, and modify or change as appropriate construction and operational plans, procedures, and BMPs to prevent the occurrence of significant impacts will be considered in a manner similar to a threshold of significance, i.e., if not for effective BMPs, significant impacts would likely occur. Requiring appropriate and effective BMPs is analogous to using performance criteria rather than prescriptive measures to ensure impacts remain less than significant. However, staff recommended and proposed conditions of certification specifically prescribing BMPs and procedures where necessary.

The methods used to analyze impacts and determine thresholds of significance for any impact are, in many cases, particular to the situation and reflect a site-specific approach for each project component and each impact. While all projects will likely have impacts, the goal is to limit any impacts to an insignificant or acceptable level, or to avoid them, if possible. Such a determination will rely on science, technology, expert opinion, and best

Finally, during project operation, an increase in the amount of impervious surfaces can increase runoff, leading to the erosion of unprotected surfaces. The project site, when completed, will be covered with impervious surfaces.

Staff recommends the adoption of three conditions that address mitigation measures designed to reduce any soil erosion and stormwater impacts to less than significant levels.

Condition of certification **SOIL & WATER-1** requires the project owner to comply with all of the requirements of the General NPDES Permit for Discharges of Storm Water Associated with Construction Activity, including the development and implementation of a Storm Water Pollution Prevention Plan for Construction, which is administered by the RWQCB.

Condition of certification **SOIL & WATER-2** requires the project owner to obtain CPM approval for a site-specific final Drainage, Erosion and Sedimentation Control Plan (DESCP) that addresses all project elements and ensures protection of water and soil resources for the construction and operational phases of the project. The DESCP was developed since the certification of the existing PEF by staff to standardized the elements of the Energy Commission-administered requirements for the protection of water quality and soil resources

Condition of certification **SOIL & WATER-3** requires the project owner to comply with all requirements of the General NPDES Permit for Discharges of Storm Water Associated with Industrial Activity, including the development and implementation of an operational Storm Water Pollution Prevention Plan, which is administered by the RWQCB.

With the development and implementation of an effective SWPPP for Construction (**SOIL & WATER-1**), and a DESCP (**SOIL & WATER-2**), and an effective SWPPP for Operations (**SOIL & WATER-3**), staff concludes that the PEFE would mitigate the potential adverse impacts caused by erosion or stormwater discharge during construction and operation of the project.

Water Supply

PEFE proposes to obtain water through the existing industrial water supply contract between PEF, LLC and the WRMSWD. As proposed, the PEFE will require an annual average of approximately 34 gpm (55 acre-feet a year at 100 percent operation) of water and a summer maximum of 66 gpm (PEFE 2005a, Table 3.4.8-1).

No significant adverse impacts to water resources were identified for PEF water use from either the WRMSWD pool supply (CEC 2000c, page 193) or the ~~WRMSWD~~ PEF/KWB banked water backup supply (PEF 2001). However, the conditions of certification for PEF required water use accounting and reporting (PEF SOIL & WATER 5). Staff requires this information to verify compliance with the annual water-use limit and also requests this data for use in the biennial Integrated Energy Policy Report (IEPR), a legislatively-mandated policy report. Based on the Commission's prior findings and staff's assessment, staff concludes that, if the total amount of water used by the existing PEF and the proposed PEFE combined does not exceed the current contracted water

supply limit of 5,000 acre-feet per year, the proposed water use for PEFE would not cause adverse impacts to the water resource supply. Staff recommends the adoption of condition of certification **SOIL & WATER-4**, which specifies the annual water use limit and the water-use reporting requirements.

Construction Water Needs

During construction, water will be needed for dust control and potable uses for construction personnel. The applicant anticipates that construction water usage would be approximately 7,650 gallons per day and approximately 1.53 million gallons during the 12-month construction period (PEFE 2000e). Staff assumes for the purposes of this assessment that construction water will be supplied by the existing PEF project from its WRMWSD water supply, which will beconfirmed with the applicant prior to the Final Staff Assessment. The estimated water requirement for construction of PEFE plus the estimated water use of the existing PEF would not exceed the WRMWSD contracted water supply of 5,000 afy.

Therefore, assuming that construction water is obtained under the current WRMWSD contract, staff concludes for the purposes of this assessment that project water use during construction of PEFE would not cause adverse impacts to water resources with the adoption of the water-supply limitations specified in condition of certification **SOIL & WATER 4**.

Possible Impacts to Other Users/System/Sources

WRMWSD's customer base is mostly agricultural, with the district supplying approximately 200,000 acre-feet a year of water. The PEFE, under the existing PEF water supply contract, would purchase excess water that is not needed by ~~WRMSD's~~ WRMWSD's historical customer base. Since water purchases are authorized by WRMWSD customers, staff concludes that PEFE water use would not cause an adverse impact to senior district water users.

In the case that no excess pool water is available, ~~WRMWSD~~ WRMWSD would provide backup water to PEFE from its banked water supplied from the KWB, under the existing PEF/KWB water supply contract; as noted previously, this contract was revised in 2001 and approved by the Energy Commission with a finding of no adverse impact (CEC 2001). The KWBA has established a program to operate, monitor and maintain the KWB and to resolve water bank use problems between members (CEC 2000c, page 192). Based on the Commission's prior findings and staff's assessment, staff concludes that use of KWB back-up water supplies by PEFE would not cause adverse impacts to KWB members.

On-site Water Treatment

The PEFE proposes to use the existing PEF water treatment system for demineralization of the water used for cooling. No increase in treatment of the potable/domestic water for the operations staff is needed by the proposed project because the operation of PEFE will require no increase in the existing PEF work force. For the purposes of this assessment, staff assumes that the increase in the potable water supply for the construction staff will be insignificant. Owing to the very low volume of water required for the PEFE, the proposed project would require no new storage

Finally, SWRCB Policy 75-58 states that "...studies associated with power plants should include an analysis of the cost and water use associated with the use of alternative cooling facilities employing dry, or wet/dry modes of operation." Since the proposed project would use existing cooling towers and associated water supply, which were analyzed in PEF, staff concludes that an analysis of alternative cooling technologies is not necessary.

Based on this review, staff has determined that the water supply, as proposed by the applicant, is consistent with SWRCB 75-58.

MONTEREY AGREEMENT AND THE KERN WATER BANK AUTHORITY

The PEFE backup water supply would be obtained from the ~~KCWB~~ KWB through the existing PEF contract with the ~~WRMWSD~~. The rules for sales from the ~~KCWB~~ KWB to third parties are specified in the Monterey Agreement and administered by the KCWA. Based on this preliminary review, staff has determined that the water supply, as proposed by the applicant, is consistent with the rules of both Monterey Agreement and KCWA.

RESPONSE TO AGENCY AND PUBLIC COMMENTS

No public or agency comments have been submitted at this time.

CONCLUSIONS

Based on this assessment, staff concludes at this time that PEFE would not result in any unmitigated project-specific or cumulative significant adverse impacts to soil or water resources and would comply with all applicable LORS if all of the recommended conditions of certification are adopted by the Commission and implemented by the applicant.

To finalize the Soils and Water Resources assessment, staff requests that the applicant provide the following additional information:

- To complete the information provided on water supply for the project, specify the proposed source of water to be used during the construction phase of the project; and
- To complete the information provided regarding water treatment for potable use, provide an estimate of the anticipated increase in the potable water demand during the construction phase of the project.

PROPOSED CONDITIONS OF CERTIFICATION

SOILS&WATER-1: The project owner shall comply with the requirements of the General National Pollutant Discharge Elimination System (NPDES) Permit for Discharges of Storm Water Associated with Construction Activity. The project owner shall develop and implement a Storm Water Pollution Prevention Plan for the construction of the entire Pastoria Energy Facility Expansion Project (PEFE) (Construction SWPPP).

SOIL&WATER-4: Water used for project operation shall be State Water Project (SWP) water as obtained from the Wheeler Ridge-Maricopa Water Storage District's (WRMWSD) excess water sold through the district's pool or banked water from Kern Water Bank (KWB) that is directly delivered or exchanged for SWP surface water. Water use for PEFE and PEFE combined shall not exceed the annual limit of 5,000 acre-feet. If no such water is available or if the PEFE water demand should cause water use to exceed the annual limit, the PEFE will not operate until such time as the Energy Commission has approved an amendment allowing for the use of an alternative supply or cooling technology. OK

Prior to the use of any water by the PEFE, the project owner shall install and maintain metering device as part of the water supply system to monitor and record the volume of water supplied to the PEFE. The metering devices shall be operational for the life of the project. (A)

The project owner shall prepare an annual Water Use Summary, which will include the total water used by the project on monthly and annual basis in acre-feet. The annual summary shall be submitted to the CPM as part of the annual compliance report. The project owner shall coordinate reporting with PEF.

Verification: At least 60 days prior to use of any water source at the PEFE, the project owner shall submit to the CPM evidence that a metering device has been installed and is operational water supply pipeline serving the project. The project owner shall provide a report on the servicing, testing and calibration of the metering devices in the annual compliance report. (A)

The project owner, in the annual compliance report, shall provide a water-accounting summary that states the source and quantity of water used at PEFE on a monthly basis in units of gallons per minute and an annual basis in units of acre-feet. The annual compliance report shall also indicate whether the water is obtained through the WRMWSD's district pool, direct pumping of KWB banked water for delivery to PEFE, or the result of surface water exchanges.

SOIL&WATER-5: Following the commencement of project operation, the project owner shall maintain a log of the volume of residual cake solid waste produced by the zero liquid discharge system. The project owner shall coordinate reporting with PEF.

Verification: Within 60 days following the commencement of project operations, the project owner shall submit to the CPM a report on the volume of residual cake solids generated by the PEFE. A status report on the volumes of residual cake solids generated and the landfills used for disposal, shall also be included in the annual compliance report submitted to the CPM.

(A) - For 55 AF/year, this is unnecessary. PEF already has meters for all water delivery from WRMWSD. It should be sufficient to show the total deliveries to PEI (including PEFE) versus the 5,000 AF/yr limit.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

IN THE MATTER OF:

APPLICATION FOR CERTIFICATION FOR THE PASTORIA ENERGY FACILITY (PEF) 160 MW EXPANSION BY CALPINE CORPORATION

DOCKET NO. 05-AFC-1
PROOF OF SERVICE LIST
[ESTABLISHED 9/13/05]

DOCKET UNIT

Instructions: *Send an original signed document plus 12 copies* ***or*** *an electronic copy plus one original paper copy to the address below:*

CALIFORNIA ENERGY COMMISSION
DOCKET UNIT, MS-4
Attn: Docket No. 05-AFC-1
1516 Ninth Street
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Also send a printed ***or*** *electronic copy of all documents to each of the following:*

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INTERVENORS

No Intervenors to date.

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DECLARATION OF SERVICE

I **Angela Hockaday** declare that on **October 20, 2005,** I deposited copies of the attached **Pastoria Letter from Robert J. Kunde/Wheeler Ridge-Maricopa WSD to J.W. Reede/CEC dated 10/19/05 regarding Comments on Preliminary Staff Assessment (05-AFC-1)** in the United States mail at Sacramento, CA with first class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above. Transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210.

I declare under penalty of perjury that the foregoing is true and correct.

[signature]

* * * *

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